GAME 220 : ENVIRONMENTAL MODELLING

Section 501, CRN 53536
Spring 2021

Instructor: Ian Burch
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Office and Hours: Online on Zoom & Learn (Tuesday & Thursday, 1:00 - 4:00 or by
appointment. Link to be posted in Learn)

Course Prerequisites:
Intro to 3D Modelling (GAME 120) OR Experience with 3D modelling software

Course Goals:
This course explores what is necessary for a full 3D environment, including modelling, texturing, rendering, and lighting. Students will learn how to use a kit-based design framework; making modular components with which to later assemble a full scene in either Blender or a game engine. Focus will be given on skills useful for game development, like procedural texturing and normal mapping.

Materials:
- Internet Access, for Learn, Zoom, and Youtube.
- Blender
- Unreal Engine 4 (UE4)

This course requires a computer. If you do not have one, let me know and we can work with campus IT to let you borrow a laptop with the necessary software.
- Blender is free, and can be gotten from https://www.blender.org/
- Unreal Engine 4 is free, and can be gotten from https://www.unrealengine.com/

Learning Objectives:
By the end of the course, students will be able to:
(1) Comfortably and skillfully model 3D objects
(2) Texture models with natural textures and procedural techniques
(3) Understand scene composition and lighting
(4) Optimize models with techniques such as normal mapping
(5) Load models into a game engine

Course Content
The course is broken up into several units, each modelling a different scene over several weeks. During the unit, well explore sequentially more complex topics. Early models may merely

need textures, while later models will be normal mapped and more elaborate. Each unit will have weekly progress checks, with the final scene models & render counting for the majority of the grade. You're also expected to share your work in a discussion forum and give constructive critiques.

Grade Breakdown:
Discussion Posts & Feedback - 20%
Castle Set - 20%
Cave Set - 20%
Other Assignments - 10%
Final Scene - 30%

Letter grades will be given as follows, with + or - given for the highest and lowest 3% in each range, respectively. Incomplete (I) grades will not be assigned without documented, extenuating, circumstances.

90% - 100%   A
80% - 89%   B
70% - 79%   C
60% - 69%   D
0% - 59%   F

Tentative Schedule:
This schedule is subject to change, but all topics listed will be covered during the semester

Date	Week	Topic	SLOs
1/18	1	Installing Blender, basic tools	1
1/25	2	Modular Design	4
2/1	3	Castle Set - Structure	1, 3
2/8	4	Castle Set - Props	1
2/15	5	Castle Set - Textures	2
2/22	6	Castle Set - Assembly & Render	1, 3
3/1	7	Cave Set - Structure	1, 3, 4
3/8	8	Cave Set - Props	1, 2
3/15	-	Spring Break	-

3/22	9	Cave Set - Assembly & Render	1, 3
3/29	10	Plants & Trees	1, 2
4/5	11	Importing into UE4	4, 5
4/12	12	Importing into UE4	4, 5
4/19	13	Build an Environment - Plan & Model	1, 3
4/26	14	Build an Environment - Model & Texture	1, 2
5/3	15	Build an Environment - Model & Texture	1, 2
5/10	16	Build an Environment - Assembly & Render	1, 3, 4

Late Work / Absences:
As we are still dealing with Covid-19 and its effects, I'll be lenient on due dates. Email me if you're going to be late on an assignment and I'll generally give an extension. Any assignments not submitted by the end of the semester (5/16) will be graded 0

Expectations:
Students are expected to conduct themselves in a professional and collegial manner. During Zoom meetings, be professional, appropriate, and mute when not speaking. When posting on discussion boards, be polite, concise, and avoid using internet slang. If you need an extension on an assignment, please email or message me before it is due. Students missing more than 4 consecutive assignments may be dropped from the course.

Disability Statement:
In accordance with University Policy 2310 and the Americans with Disabilities Act (ADA), academic accommodations may be made for any student who notifies the instructor of the need for an accommodation. It is imperative that you take the initiative to bring such needs to the instructor's attention, as I am not legally permitted to inquire. Students who may require assistance in emergency evacuations should contact the instructor as to the most appropriate procedures to follow. Contact Accessibility Resource Center at 277-3506 or arc.unm.edu for additional information.

If you need an accommodation based on how course requirements interact with the impact of a disability, you should contact me to arrange an appointment as soon as possible. At the appointment, we can discuss the course format and requirements, anticipate the need for adjustments and explore potential accommodations. I rely on the Disability Services Office for

assistance in developing strategies and verifying accommodation needs. If you have not previously contacted them I encourage you to do so.

Academic Integrity:
Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, up to and including dismissal, against any student who is found guilty of academic dishonesty or otherwise fails to meet the standards. Any student judged to have engaged in academic dishonesty in course work may receive a reduced or failing grade for the work in question and/or for the course.

Academic dishonesty includes, but is not limited to, dishonesty in quizzes, tests, or assignments; claiming credit for work not done or done by others; hindering the academic work of other students; misrepresenting academic or professional qualifications within or without the University; and nondisclosure or misrepresentation in filling out applications or other University records.

Credit-hour Statement:
This is a three credit-hour course. Class is asynchronous, but videos and feedback will be given equivalent to two 75-minute sessions of direct instruction for fifteen weeks during the Fall 2021 semester. Students are expected to complete a *minimum* of six hours of out-of-class work (or homework, study, assignment completion, and class preparation) each week.

Title IX :
In an effort to meet obligations under Title IX, UNM faculty, Teaching Assistants, and Graduate Assistants are considered "responsible employees" by the Department of Education (see pg 15 - http://www2.ed.gov/about/offices/list/ocr/docs/qa-201404-title-ix.pdf). This designation requires that any report of gender discrimination which includes sexual harassment, sexual misconduct and sexual violence made to a faculty member, TA, or GA must be reported to the Title IX Coordinator at the Office of Equal Opportunity (oeo.unm.edu). For more information on the campus policy regarding sexual misconduct, see:
https://policy.unm.edu/university-policies/2000/2740.html

Citizenship and/or Immigration Status: All students are welcome in this class regardless of citizenship, residency, or immigration status. Your professor will respect your privacy if you choose to disclose your status.   As for all students in the class, family emergency-related absences are normally excused with reasonable notice to the professor, as noted in the attendance guidelines above. UNM as an institution has made a core commitment to the

success of all our students, including members of our undocumented community. The Administration's welcome is found on our website: http://undocumented.unm.edu/.